4.0 Information and Analysis

4.1a Measurement of Organizational Performance
4.1a(1) Addressing major components

Data selection, effectiveness, and integration. Our dashboard (table 4.1-1) shows how our metrics align with our three key success factors from our strategic plan and our five key requirements—customer satisfaction, cost, quality, schedule, and safety, which comprise our business fundamentals. Measures are developed and revised through annual strategic and business planning based on strategic goals as explained in 2.0. Then, to align process and product performance with corporate goals, product and functional teams translate key success factors and requirements into process and product performance measures during annual business planning. That approach enables us to deploy strategies and goals to all levels of the organization and to consolidate key data for Center-wide performance monitoring. Corporate performance is reviewed primarily through the LIR/PRB process and monthly Business Meeting (1.1b(1)). Finally, we link team performance to corporate strategy through our team awards system (5.1). Those performance awards are based on team goals developed during business planning.

Key comparative data selection, effectiveness, and integration. Asterisks on the HNC Dashboard shows how comparative data align with our key success factors and requirements. Through analysis of market and customer expectations, we found that cost is the determining factor in sustaining our strategic goals. Because customers are satisfied with quality, we concentrate on comparing our productivity and costs to similar providers through the following criteria:

- Our customers think we cost too much. Customers are satisfied with our quality (as determined by surveys, referrals, repeat business, etc.), but they rate us lowest in cost (fig. 7.1-1).
- HQUSACE targets cost concerns via two strategic planning assumptions: (1) Federal funding will continue to decline and (2) the Administration will continue to support government reinvention initiatives. Therefore, productivity, cost, and customer satisfaction with cost are key factors concerning Corps work distribution.
- The comparison of cost efficiency measures aligns with requirements of Government Performance and Results Act of 1993.

We seek comparative data from (1) sources that are reliable, (2) organizations that perform work similar to our critical functions, and (3) organizations with outstanding performance. Our primary sources are as follows:

- HQUSACE quarterly CMR (1.1b(1)) compares Corps performance against command goals. Those data, then, become the basis for our most critical competitive benchmark: Corps districts with large military programs. Corps districts, more than any other class of organization, operate under the same market, regulatory, and policy restrictions. Furthermore, data are parallel. Finally, HQ work distribution is our greatest risk.
- For comparison to the broader engineering world, we use Harper and Shuman's annual survey of 230 engineering firms.
- We also compare to the industry's top A-E firms through proprietary sources.

Data and information reliability. We provide data reliability through internal, independent, and data access controls as follows.

- *Internal controls.* Within the Center, we ensure data reliability through the process outlined in fig. 4.1-1. At ❶ of fig. 4.1-1, data are collected from automated databases (table 4.1-2), customer requirements, and market trends. At❷, data collected include new work, completed work, schedules, requirements, end strength, new technology needs, capabilities and skills, and manpower, training, and travel requirements. At ❸, project managers submit estimates and projections to our Resource Management (RM) Directorate for validation. If the data are questionable, RM checks the input at ❹, reviewing the submission, comparing it to historical data, workload requirements, and other variables and makes adjustments at ❺.

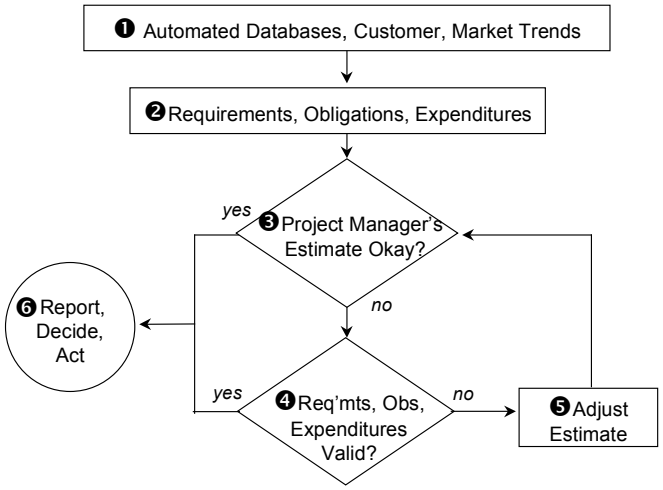

Figure 4.1-1. Internal objectivity/validity controls

Table 4.1-1. HNC Dashboard aligns performance measures to key success factors and key requirements.

METRICS	FIGURE REFERENCE #	KEY SUCCESS FACTORS			KEY REQUIREMENTS				
		Customer & Market Needs	Invest In People	Revolutionize Effectiveness	Quality	Cost	Schedule	Safety	Customer Satisfaction
7.1 Customer Satisfaction:	**7.1-**								
Satisfaction trends, segmentation, CSI	1, 2, 5, 6	X			X	X	X	X	X
Satisfaction competitive comparisons*	3, 4, Table 7.1-1 # 16	X			X	X	X	X	X
Survey response rate	7	X							X
Dissatisfaction	8	X							X
Retention, referrals, loyalty	9, 10*, table 7.1-1 #'s14, 18-20	X							X
Product satisfaction	11 & table 7.1-2	X							X
7.2 Financial/Market:	**7.2-**								
Customer savings (equates to profit)	1, table 7.2-1	X		X					X
Customer savings competitive comparison	2*	X		X		X			X
TLM, overhead, chargeability	8*, 9*, 10*, 11*, 13*, 14*	X		X		X			X
Workload, productivity	3, 4, 5*, 6, 7a*, 7b*, 12*, 15, 16	X		X		X			X
Market, growth, projections	17, 18, 19, Overview figs. 1, 2	X		X		X			X
7.3 Human Resources:	**7.3-**								
Employee satisfaction	1, 2, 6*, 7		X	X					
Employee development evaluation	12, 13, 14		X	X	X				X
Employee well-being	3, 4, 5, 11*		X	X					
Diversity	8*, 9*, 10*		X	X					
Work System Effectiveness	15*, 16, 17, 18, 19, table 7.3-1		X	X	X	X	X	X	X
7.4 Supplier Management:	**7.4-**								
Supplier evaluation	2, 3, 5, 6			X	X	X	X	X	
Supplier competitive comparison	1*, 4*, 13*, 15*	X		X	X	X	X	X	X
Supplier on-time delivery/within budget	7, 8, 9, 15					X	X		X
Supplier quality, safety	10, 11, 12, 14*, 16				X	X	X		X
7.5 Operational:	**7.5-**								
Key process quality	14*, 16, 17*, 18*, 24*, 32, 48, 49, 50, tables 7.1-2, 7.5-1	X	X		X				X
Key process safety	7.3-11*, 7.4-14*			X	X				X
Key process productivity/efficiency	2*,4*, 5, 12, 13, 15*, 21, 22, 25, 31, 34*, 35, 38		X	X		X	X		X
Key process cost	6, 8, 9, 10, 11, 19, 20, 26, 27, 28, 30, 33, 40, 41, table 7.5-2								X
Key process responsiveness	1*, 3*, 7, 23, 29, 36, 37, 39			X			X		X
Key process customer satisfaction	14*, 24*				X	X	X	X	X
Key support process quality	42, 43, 48, 49, 50, table7.5-1			X	X				X
Key support process efficiency	43, 44, 45, table 7.5-4		X	X	X	X	X		X
Key support process cost	43, table 7.5-4			X		X			X
Key support process responsiveness	45, 46, 47			X			X		X
Key support process customer sat.	42			X	X				X
Public responsibility	48, 49, 50, 51	X		X	X	X	X	X	X
*Competitive comparisons									

Data objectivity is enforced through separation of functions, since PM's report to the civilian deputy and RM reports to the military deputy (fig.5, page v). When the data are approved, they are reported and used for decision making at ❻. Samples of key actions are shown in table 1.1-2.

• *Independent controls.* Data reliability and objectivity are also ensured through the use of automated databases (table 4.1-2) created and maintained by independent organizations outside our chain-of-command. Within those systems, reliability of data includes daily and monthly reconciliation of subsidiary records and crosschecks with our records. Furthermore, the Army Audit Agency and General Accounting Office audit and validate the systems.

Table 4.1-2. Primary data systems

System	Data Type
CEFMS (Corps of Engineers Financial Management System)	budget, financial, labor
PROMIS (Project Management Information System)	schedule
SAACONS (Standard Army Automated Contracting System)	cycle time/on-time delivery
A-E Contract Administration Support System (ACASS), Construction Contract Administration Support System (CCASS), and Service and Supplies Contractors Appraisal Support System (SSCASS)	Supplier performance
ACPERS (Army Civilian Personnel Reporting System)	human resource, EEO, safety

• *Data access controls.* User needs for data and analysis type and ease of use are addressed through beta testing, configuration control procedures, and off-line comments to the system proponent. For example, as the beta test site for CEFMS, we have contributed to over 200 system modifications since 1995. Such modifications continuously improve use and reliability. To further ensure access reliability and coordinate information issues on a continuing basis, our Information Management Committee (IMC), comprised of senior leaders, meets regularly.

Financial impact and correlations supporting planning. We found that cost is the most critical factor affecting our strategic goals and end-state (table 2.2-1). Cost data enable us to consolidate and correlate critical performance factors across the entire organization:

• *Present and Future Indicator of Financial Health:* Through careful tracking of costs, we keep projects within budget and develop accurate budget projections and resource allocation.

• *Past and Future Indicator of Productivity:* To calculate productivity, we use expenditures per employee, that is, full-time equivalent (FTE). This gives us workload for trend and comparative analysis. Workload per FTE parallels the concept used by DOD, Office of Management and Budget, and Congress to fund programs.

• *Present Indicator of Quality:* Cost growth, an indicator of rework or inaccurate estimates, is one way we measure quality.

• *Leading Indicator of Competitiveness:* Our financial rates are our key competitiveness factor when marketing our products an services.

• *Leading Indicator of Customer Satisfaction:* Our customer satisfaction has increased (fig.7.1-1) while work has increased (table 3.1-3).

Aggregated cost data, therefore, provide many perspectives on corporate health. Such data are used for decision making from corporate levels to work teams, for assessing our competitive standing, and for reporting to HQ, customers, and other stakeholders. Cost data are critical dashboard measures. In fact, "Maintain Cost Effectiveness" is one of our guiding principles (fig. 1.1-2). Fig. 7.2-1 is the highest level aggregate of all improvement efforts and shows a direct correlation with increased customer satisfaction and new work.

4.1a(2) Keeping current with changing needs All measures are reviewed as we refine our strategies, goals, and performance measurements through the approach outlined in fig. 4.1-2.

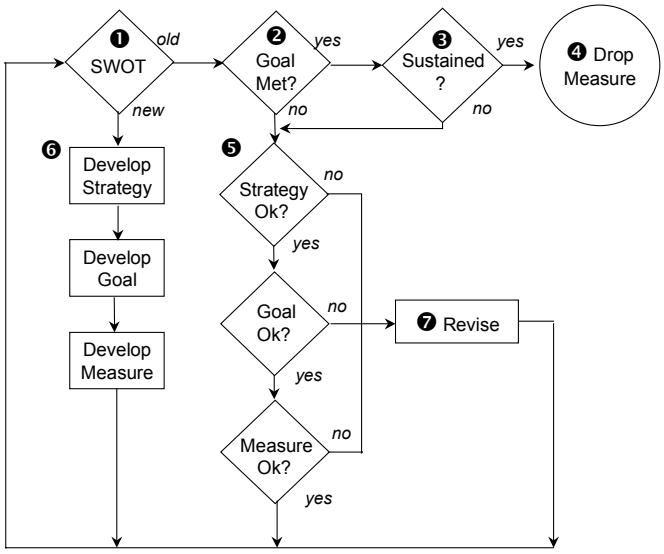

Figure 4.1-2. Updating performance management

In ❶ of fig. 4.1-2, performance of action plans developed through SWOT analysis during strategic and business planning (2.0) are reviewed throughout the year as described in table 1.1-1. If the goal is met in ❷ and performance has been sustained in ❸, then the measure may be reviewed less frequently or dropped completely. If the goal is not met in ❷ or performance is not sustained in ❸, strategies, goals, and/or measures are reviewed in ❺ and revised in ❼. If the SWOT is new, an action plan is developed in ❻.

To ensure continued access and reliability for changing project, program, and customer needs, business plans include information technology requirements, which are coordinated by our IMC (fig. 1.1-1 at ❻). For overall data system improvement, we use our gap analysis (fig. 1.1-4). Furthermore, because proper use of information systems is crucial to data access and reliability, we train users on new information systems. When a new system is introduced, we also provide a transition cell that serves as a help line, or interface, between the proponent and our employees needing questions answered.

4.2a Analysis of Organizational Performance

4.2a(1) Supporting review and planning Primarily, we analyze trends, levels, and comparisons. Through such analyses, we:

- Decide whether a change in direction is needed.
- Determine the impact of a decision or change.
- Project risk and payoff.
- Compare our performance to others.
- Set goals.
- Determine progress toward goals.
- Make correlations.

Table 4.2-1 shows how performance data from our HNC Dashboard supports key organizational planning decisions and actions.

Table 4.2-1. Key sample findings and correlation

Action	Correlation Figure References		
Cost-of-Doing Business process	costs down: 7.2-4	customer sat. up: 7.1-1	new work up: 7.2-16, -17
Flexiplace	sick leave down: 7.3-3	climate up: 7.3-1	productivity rising: 7.2-6
Team structure	productivity up: 7.2-6	customer sat. up: 7.1-1	overhead down, chargeability up: 7.2-8, 7.2-13

4.2a(2), (3) Linking analysis to daily operations Analysis deployment is driven in three ways and could be compared to rotating gears as shown in fig. 4.2-1. This model provides for communication to all levels through direction, planning, and execution.

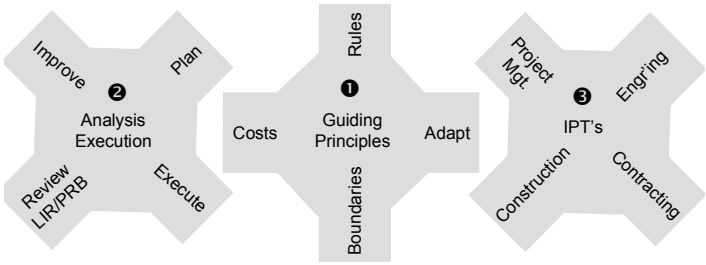

Figure 4.2-1. Linking analysis to work unit operation

- In ❶ of figure 4.2-1, our guiding principles (fig. 1.1-2) provide the overall guidance and analysis summary for strategic direction. That direction is reviewed and updated by leaders annually during our strategic planning SWOT analysis (2.1).
- In ❷, our strategic and business plans cascade goals from corporate-level analysis to team-level action. Plan execution is reviewed and coordinated at the team level (LIR's) and at the corporate level (PRB's) (item 1.1b(1)).
- In ❸, our team structure integrates processes and product lines. Integrated process teams (IPT's), therefore, are populated with process members who communicate between IPT's and process owners. Teams develop their business action plans based on strategic planning and reinforce communication between product lines and processes. Our team performance award system links team performance to the achievement of strategic business plan goals. Finally, IPT's are the communication link with customers, suppliers, and other stakeholders.

Table 4.2-2 shows examples of actions and their link to analyses and the impact on the organization.

Table 4.2-2. Key sample of analysis link to actions

Initiative	Desired Results	Link to Analyses	Results
Team Structure	Improve productivity Decrease costs Improve customer satisfaction	Customer needs PM study	Fig. 7.2-6, Fig. 7.2-4 Fig. 7.1-1
360 Peer Review	Improve customer focus Reinforce values Reduce boundaries	Benchmark on Army Mgt. Engineering College (AMEC)	Figs. 7.1-1, -3 Figs. 7.3-16—19 Fig. 7.3-15
Annual External Customer Survey	Project loyalty, referrals Comparison to competitors Increase customer satisfaction	Market trends Gap analysis	Figs. 7.1-9, -10 Figs. 7.2-2, -3 Fig. 7.1-1